

- e) What is the fundamental difference between a chemical and physical property?
Give at least one example of both.
- f) What is the difference between an extensive property and an intensive property?
Provide examples of each. Which presents a better way to identify a substance?
- g) What is the difference between mass and weight?
- h) What does temperature actually measure?
- i) What is the basis of the celsius temperature scale? What is the basis of the kelvin temperature scale?

4.) (16 pts total, 4 pts each) Convert the following temperatures:

a) 350 K into °C (Be mindful of significant digits)

b) 104 °F into °C (Be mindful of significant digits)

c) 85.0 °C into °F (Be mindful of significant digits)

d) 53 °C into K (Be mindful of significant digits)

5.) (18 pts total, 6 pts each) Use your knowledge of dimensional analysis and life to answer the following related questions. **Write your answers in scientific notation.**

a) The longest home run hit in major league baseball this season was 486 feet. Approximately how many centimeters did the ball travel?

- b) According to its website, Netflix contains approximately 125,000,000 hours of programming at any given time. How many years would it take an individual to watch the current Netflix library of content?
- c) Nate has a problem. Recently, Nate (and the rest of the country) discovered the Popeye's chicken sandwich. According to nutritional data offered on the website, a chicken sandwich and fries combo meal contains 1004 calories. While Nate wants to fend off excess weight gain until the holiday season, he cannot help but eat five of these combo meals a day. If he burns 363 calories for every 30 minutes of running, how long will he need to run every day to keep his slim physique?